



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,623	03/19/2004	Michael Wagner	10139/01602	2145
76960	7590	09/04/2009		
Fay Kaplun & Marcin, LLP 150 Broadway, suite 702 New York, NY 10038			EXAMINER FISHER, ELANA BETH	
			ART UNIT 3733	PAPER NUMBER
			MAIL DATE 09/04/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/805,623

Applicant(s)

WAGNER ET AL

Examiner

ELANA B. FISHER

Art Unit

3733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-176 is/are pending in the application.
- 4a) Of the above claim(s) 53-65 and 164-176 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 16-39, 42-52, 66-73, 76-101, 104-127, 130-148 and 151-163 is/are rejected.
- 7) ☒ Claim(s) 14, 15, 40, 41, 74, 75, 102, 103, 128, 129, 149 and 150 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7, 10, 13, 16-26, 89-95, 98, 101, and 104-114 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. Patent 5,085,660) in view of Talos et al. (U.S. Patent 5,709,686).

Lin discloses a bone plate (10) having a longitudinal axis and comprising an upper surface, lower surface, a plurality of first type of holes (11) and a plurality of second type of holes (12). The first type of holes (11) are elongated (FIG 1) and extend through the upper and lower surfaces, and the first type of holes (11) are non-threaded (FIG 1) and configured to engage a substantially spherical screw head and provide compression of fractured bone fragments. Additionally, they have a central axis and a longitudinal axis, wherein the longitudinal axis of the first type of holes is substantially aligned with the longitudinal axis of the plate. The plurality of second type of holes (12) have a substantially circular outer perimeter (FIG 1) and extend through the upper and lower surfaces and includes an internal thread (FIG 1) for engaging a threaded portion of a screw head (33). The plurality of first type of holes (11) are located closer to a first end of the plate (10), and the plurality of second type of holes (12) are located closer to a second end of the plate. Additionally, the second types of holes (12) have openings in the

upper and lower surfaces of the bone plate (10), with the openings having substantially the same dimensions (FIG 1); The bone plate further comprises a screw (20) having a head (22, 23), wherein the head is substantially smooth (23), and including a partially threaded portion (22) as well.

Lin discloses that the first type of holes (11) is non-threaded, however fails to disclose that they comprise a non-threaded and threaded portion. Talos et al. disclose a bone plate (FIG 1) having upper and lower surfaces, and comprising a plurality of a first type of holes (2) having a longitudinally axis (1), a central axis, non-threaded portion (FIG 1) and a threaded portion (3), with the threaded portion (3) extending at an angle with respect to the central axis (Column 2, lines 41-44). The first type of holes (2) further have first and second ends along the longitudinal axis (1), and the threaded portion (3) is adjacent one of the ends and located closer to a central portion of the bone plate (1) than to an end portion (FIG 1). Additionally, the non-threaded portion includes a substantially spherical, concave recessed portion (5) in the upper surface of the plate (1), such that the hole (2) tapers inward in a direction from the upper surface towards the lower surface to form at least one ramp surface for engagement with a screw head. Talos et al. further disclose that the first type of hole has a first dimension (DL) substantially parallel to the longitudinal axis (1) and a second dimension (DQ) substantially perpendicular to the longitudinal axis (1), with the first dimension (DL) being between 1.1 and 3 times larger than the second dimension (DQ; Column 2, lines 33-34). It therefore would have been obvious to one skilled in the art to modify the plate taught by Lin by having the first type of holes (11) be that taught by Talos et al., because the holes taught by Talos et al. (2)

have a "special geometry" that "allow selective use of various type of bone screws" with the same bone plate (Column 2, lines 65-67), thus meaning that the proper bone screw can be used that best suits the correction of the fracture of the patient.

Further, Lin fails to disclose that the second type of hole (12) conically tapers inward from the upper surface to the lower surface of the plate. Talos et al. disclose a conical tapering (5) of the hole (2) inward from an upper to lower surface of the plate in order to securely seat the head of a bone screw. It therefore would have been obvious to one skilled in the art to modify the plate taught by Lin, by additionally having the second type of hole (12) be conically tapered inward, as is taught by Talos et al., because it allows for the head of the bone screw to be securely seated within the hole, allowing for more effective compression of a fracture in a patient.

Finally, Lin in view of Talos et al. fail to disclose that the threaded portion extends through an angle between 190 and 280 degrees, or more specifically between 200 and 250 degrees with respect to the central axis, and additionally fail to disclose that the conically tapered portion of the second type of hole extends between 5 and 20 degrees. It would have been obvious to one having ordinary skill in the art at the time the invention was made the threaded portion extend through an angle between 190 and 280 degrees, or more specifically between 200 and 250 degrees with respect to the central axis, and additionally to have the conically tapered portion of the second type of hole extend between 5 and 20 degrees, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

3. Claims 27-39, 42-52, 66-73, 76-88, 115-127, 130-148, and 151-163 rejected under 35 U.S.C. 103(a) as being unpatentable over Kyle et al. (U.S. Patent 5,749,872) in view of Talos et al. (U.S. Patent 5,709,686).

Kyle et al. disclose a bone plate (28) having a longitudinal axis and comprising an upper surface (76), lower surface (74), a plurality of first type of holes (60) and a plurality of second type of holes (98). The first type of holes (60) are elongated (FIG 3) and extend through the upper and lower surfaces, and the first type of holes 60) are non-threaded (FIG 2) and configured to engage a substantially spherical screw head (FIG 4) and provide compression of fractured bone fragments. Additionally, they have a central axis and a longitudinal axis, wherein the longitudinal axis of the first type of holes is substantially aligned with the longitudinal axis of the plate (FIG 3). The plurality of second type of holes (98) are non-threaded (FIG 2), elongated, have longitudinal and central axes, and have a substantially circular outer perimeter (FIG 3) and extend through the upper and lower surfaces (76, 74). The plurality of first type of holes (60) are located closer to a first end of the plate (28), and the plurality of second type of holes (98) are located closer to a second end of the plate (FIG 2; FIG 3). Additionally, the second types of holes (98) have openings in the upper and lower surfaces of the bone plate (28), with the openings having substantially the same dimensions (FIG 3); The bone plate further comprises a screw (30) having a head, wherein the head is substantially smooth (FIG 10). It is also noted that Kyle et al. disclose that the second type of holes (98) are conically tapered inward (100) from the upper surface (76) towards the lower surface (74) of the plate, thus forming a ramp surface for engaging with a screw head; and first type of holes

(60) includes a concave recessed portion (82) in the upper surface (76) that is substantially spherical (FIG 4), also forming a ramp surface for engagement with a screw head (FIG 4). Additionally, there is a third type of hole (48) extending through the upper and lower surfaces (FIG 10) that is substantially non-threaded, and that additionally includes an internal thread (130, FIG 10) and is configured and dimensioned for engaging a threaded portion of a screw head.

Kyle et al. disclose that the first type of holes (60) is non-threaded, however fail to disclose that they comprise a non-threaded and threaded portion. Talos et al. disclose a bone plate (FIG 1) having upper and lower surfaces, and comprising a plurality of a first type of holes (2) having a longitudinally axis (1), a central axis, non-threaded portion (FIG 1) and a threaded portion (3), with the threaded portion (3) extending at an angle with respect to the central axis (Column 2, lines 41-44), and a bone screw with a partially threaded head (6). The first type of holes (2) further have first and second ends along the longitudinal axis (1), and the threaded portion (3) is adjacent one of the ends and located closer to a central portion of the bone plate (1) than to an end portion (FIG 1). Talos et al. further disclose that the first type of hole has a first dimension (DL) substantially parallel to the longitudinal axis (1) and a second dimension (DQ) substantially perpendicular to the longitudinal axis (1), with the first dimension (DL) being between 1.1 and 3 times larger than the second dimension (DQ; Column 2, lines 33-34). It therefore would have been obvious to one skilled in the art to modify the plate taught by Kyle et al. by having the first type of holes (11) be that taught by Talos et al., because the holes taught by Talos et al. (2) have a "special geometry" that "allow selective use of various type of bone

screws” with the same bone plate (Column 2, lines 65-67), thus meaning that the proper bone screw can be used that best suits the correction of the fracture of the patient.

Finally, Kyle et al. in view of Talos et al. fail to disclose that the threaded portion extends through an angle between 5 and 20 degrees, between 190 and 280 degrees, or more specifically between 200 and 250 degrees with respect to the central axis, and additionally fail to disclose that the conically tapered portion of the second type of hole extends between 5 and 20 degrees. It would have been obvious to one having ordinary skill in the art at the time the invention was made the threaded portion extend through an angle between 5 and 20 degrees, between 190 and 280 degrees, or more specifically between 200 and 250 degrees with respect to the central axis, and additionally to have the conically tapered portion of the second type of hole extend between 5 and 20 degrees, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

4. Claims 8-9, 11-12, 96-97, and 99-100 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. Patent 5,085,660) in view of Talos et al. (U.S. Patent 5,709,686) as applied to claims 6 and 93 above, and further in view of Kyle et al. (U.S. Patent 5,749,872).

Lin in view of Talos et al. disclose a bone plate according to claims 6 and 93 above, however fail to disclose a third type of hole extending therethrough. Kyle et al. disclose a bone plate comprising first, second and third types of holes (60, 98, 48), with the third type (48) being substantially non-threaded, and wherein a plurality of holes of the first type (98) and the third type of hole (48) are located closer to a first end of the

plate (28) and a plurality of hole of the second type (60) are located near a second end of the plate. I Therefore would have been obvious to one skilled in the art to modify the plate taught by Lin in view of Talos et al. by having a third type of hole, as is taught by Kyle et al., because the third type of hole allows for more variation of bone screws to be used, thus provided the best combination for compression of a fracture in a patient.

Allowable Subject Matter

5. Claims 14-15, 40-41, 74-75, 102-103, 128-129, and 149-150 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments with respect to claims 1-52 and 66-163 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELANA B. FISHER whose telephone number is (571)270-3643. The examiner can normally be reached on Monday through Friday from 8:30AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eduardo Robert can be reached on (571)272-4719. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elana B Fisher/
Examiner, Art Unit 3733
/Eduardo C. Robert/
Supervisory Patent Examiner, Art Unit 3733